

— DIELECTRICS — and the early detection of disease

***A new era in
diagnostics
has arrived
with a device
that can
detect
disease
before any
physical signs
appear.***

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On 5th February 1994 at the Sydney World Trade Fair, advanced instrumentation for the early identification of disease, including cancer and AIDS, was introduced to the public by Sydney-based Taubert Technologies Pty Ltd.

The Dielectric Diagnostic Analyser (DDA), developed by eminent biophysicist, Dr Sergei Barsamian, director of S&S Biophysics Laboratory, is the only one of its kind in the world employing sensitive computerised techniques to reveal electromagnetic (EM) disturbances in the cytoplasm (the protoplasm outside the nucleus) of living cells.

Information obtained from electrode sensors is fed to a device that automatically monitors the energetic condition of the cell which is then presented for assessment on a computer readout.

The term 'dielectric' refers to a non-conductor of electrical currents. Cells, being dielectric in nature, are therefore non-conductors of currents but are controlled by EM fields. As information-carrying EM fields direct and organise all molecular or chemical activities in the biophysical system, the DDA is thus able to determine the very beginning of the development of a disease even before its clinical or physical appearance, which should be seen as a secondary effect.

THE ELECTROMAGNETIC FIELD AS PRIMARY

In order to gain a clear picture of the principles underpinning the DDA's method, it is best to look first at some earlier as well as current concepts and findings relating to EM energy fields and their role in the process of morphogenesis, or the evolutionary development of an organism. A field is to be understood as a region of space characterised by a physical property.

The idea of 'fields of influence' laid down by Jan Christiaan Smuts (1870-1950), a founder and one-time prime minister of the Union of South Africa, in his book, *Holism and Evolution* (1926), provides one of the earliest insights into energy fields and holism to arise in this century. He writes:

"Every 'thing' has its field. Every concept has likewise its field. It is in these fields only that things really happen. It is the intermingling of fields which is creative or causal in nature. The hard, secluded concrete thing or concept is barren, and but for its field it could never come into real contact or into active or creative relations with any other thing or concept. Things, ideas, animals, plants, persons; all these, like physical forces, have their fields, and but for their fields they would be unintelligible, their activities impossible, their relations barren and sterile. In isolating things and ideas apart from their fields, and treating the latter as non-existent, has made the world of matter and life inexplicable.

"The organism and its field is one continuous structure, and in this continuum is contained all of the past which has been conserved and still operates to influence the present and the future of the organism; in it is contained all that the organism is and does in the present; and finally, in it is contained all that the organism vaguely points to in its own future development and that of its offspring. The whole is there carrying all its time with it."

An almost identical concept in relation to 'morphic' fields is being projected today by British biochemist, Rupert Sheldrake.

That any living entity, e.g., a cell, exhibits an EM field was experimentally discovered over 40 years ago by the Russian scientist Deveyatkov. A further body of scientific evidence, showing that electrodynamic fields organise and control physical structure, came

into focus also in the middle decades of this century with the work of the late Harold Saxon Burr, the distinguished neuro-anatomist of the Yale School of Medicine. His research with animals and living plants revealed that what he termed "L-fields" or "life fields" surrounding young salamanders were roughly shaped like the adult animal, and that the field's electrical axis, which was aligned with the brain and spinal cord, originated in the unfertilised egg—thus contradicting conventional biological and genetic theory. With seedlings, he found that the electrical field surrounding a sprout was not the shape of the original seed but resembled the adult plant, indicating that any developing organism is destined to follow a prescribed pattern of growth generated by its individual EM field. Any organism possesses an L-field as a whole which embraces subsidiary or 'local' fields representing the organism's component parts.

Moreover, in relation to human behaviour he writes:

"The behaviour of living systems is a consequence of the pattern and organisation provided by the L-field, and abnormalities in the L-field can give advance warning of future symptoms before they are physically evident. L-fields reflect also mental and emotional states which evoke energy in the nervous system. The L-field regulates and controls the creature whatever it may be, and its aims are wholeness, organisation and continuity."

With his Yale associate, Northrup, Burr succeeded in establishing conclusive evidence—with the use of highly sensitive equipment capable of measuring electrical discharges in the body as small as five-millionths of a volt—that the electrical potential found in the human body is directly related to an electrical pattern which dictates the nature, the form, growth and evolutionary direction of the organism.

His findings were preferred not to be heard, however, by the scientific establishment of the time. The details of his work are well documented in his book, *Blueprint for Immortality*.

Experimental details of the findings were documented in 1988 by the *American Journal of Biological Physics* ("A Morphogenic Process in Low-energy Electromagnetic Fields", by Drs S. P. and S. S. Barsamian), and later experimentally replicated and endorsed by the Max Planck Institute of Biophysics in Berlin, Germany, among others.

THE FORMATIVE FIELD

The discovery was the direct outcome of a search to unveil the cause of cancer and to resolve the many questions surrounding the problem. What is cancer but 'new growth' or un-natural growth? The materialistic schools were providing no answer in cancer research, and the fundamental question became: What causes growth?

Dr Barsamian explains the nature of the field:

"The discovered vortical field is of low-energy; it is dynamic or active. It is a receiver and transmitter of all energy patterns existing in our physical universe."

"It recycles information according to the 'attractability' of a specific energy pattern existing at the physical level when the conditions are conducive. It is the responsible instrument for the emergence of matter and for growth and development in living biomatter. It is an expression of dynamic Nature herself and is an

attribute of one universal, formative field of potential energy."

The nature of the formative field can be best imagined in the context of Dr Barsamian's words to exhibit the function of a magnetic video recording tape. Upon this 'videotape' are impressed the energetic patterns of all physical, moral and psychic emissions occurring throughout time. The individual pattern or blueprint for form and growth has its origin at this source and is radiated when the frequency pattern of an embryo or seed at the physical level attracts that sympathetic vibration, and when the conditions for its manifestation are conducive—in terms of physics, when a state of 'coherence' or pattern recognition exists. The physical thus conforms to the morphic field pattern, which in turn is influenced and modified by our own energetic emissions. We replicate our own kind, as does all of nature, by this method of interaction and feedback. Rupert Sheldrake's "morphogenetic field" concepts and the late physicist David Bohm's "implicate" and "explicate" orders are closely allied to the principle.

In the ancient Indian Vedic understanding now being closely scrutinised by many modern researchers, the information stored in the universal field is identified as the "Akashic Record"—*akasha* being the Sanskrit term for "space". Space is not a void but a plenum of titanic forces and interacting energy fields, while its

essential property is described by the Vedic seers as pure, undifferentiated, unmanifested 'light' or radiation—the stuff of consciousness itself. Matter, or atomic structure then, is to be viewed simply as condensed or crystallised light—the Sanskrit *kasha*. The reasoning points to the entire universe of energy and matter as being one dynamic, conscious living organism.

Fritjof Capra, in *The Tao of Physics*, describes the field as "a continuous medium, present everywhere in space of which particles of matter are merely condensations,

concentrations of energy which come and go, dissolving into the underlying field"; and Albert Einstein stated, "There is no place in this new physics both for the field and matter, for the field is the only reality. We may therefore regard matter as being constituted by the regions of space in which the field is extremely intense."

We soak like sponges in water in an all-pervading sea of invisible subtle substance which has the capacity to vivify our physical being, and imbue us with a conscious sense of existence.

The human organism is in reality a condensed, complex energy system held together in a state of near equilibrium by the forces of attraction and repulsion, today commonly termed electromagnetism.

Such understanding not only contravenes the mechanical 'laws' of established Newtonian science which sees humans as machines that have evolved solely by the virtue of obscure chemical interactions, but lifts the veil of mysticism from much of what has been termed 'metaphysical' or 'occult' in relation to human experience—terms which are the products only of the lack of correct information. Nor is this some 'revolutionary new theory' as the hard-core materialists would like to have us believe, but echoes a one-time universal understanding central to the science and philosophy of every high civilisation throughout time. Physics today is merely re-acknowledging it.

In 1989, a further announcement came from the Institute of Physics at the Chinese Academy of Sciences in Beijing:

The physical thus conforms to the morphic field pattern, which in turn is influenced and modified by our own energetic emissions.

"Evidence now exists that the essential view of 'life' is characterised not by chemical reactions but by information-carrying electromagnetic fields. Within this framework, explanation of all biological processes, e.g., health, ageing, cancer, communication, biological rhythms, regulation and biochemical control, may be found."

DISCOVERY OF THE VORTICAL FIELD

The experimental model used by Dr Barsamian was simple, yet elegant. A glass slide coated in a solution of polystyrene and benzol gave the slide a polymer coating. Polymers are macro-molecules, dielectric in nature, and used in science to represent human cells. A carbon particle or 'charge' (carbon being the physical basis of molecular structure) placed on the slide, upon examination revealed a spiral appearing on the polymer and surrounding the charge.

Acting as a sensitive film emulsion, the polymer recorded a phenomenon which involves factors outside the normal concept of space-time cause-effect. Why? Because the spiralling configuration is not formed on the polymer by the intrinsic nature of the particle, but owes its origin to the vortical field which is attracted to the particle through coherence.

This situation creates an unfolding of the field's potential energy towards the particle in a vortex pattern, electromagnetic in nature. The result is a stimulation of the energy of the particle, or host; the field nourishes it. The energy enters the particle via a singular point of neutrality or a vacuum point in the charge. In the human entity, the 'chakras', or life-energy induction centres, fulfill the same purpose.

This inpouring of vitalising energy into a natural system is a function essential to the processes of life. In relation to cancer, it is this interaction between an EM field and that of a vulnerable cell which causes unnatural growth.

BIOLOGY AT THE CROSSROADS

Conventional biologists have never been able to explain how growth and development of organisms is planned and organised. The idea of 'random forces' at work in nature is, by necessity, a misnomer. Random forces do not construct forms of any value or meaning, but rather destroy those that already exist (entropy).

Life's processes are underpinned by organisation which implies an intelligence and purpose. Living tissue is constantly changing, which shatters the idea that matter is primary since, clearly, something controls the matter and its changes. How can consciousness or intelligence be a mere product of physical functioning when the physical is compounded of transitory materials? The mechanistic view has been likened by one prominent researcher to a "weird tale from the *Arabian Nights*".

Materialism is unable to account for many of the observed effects of mind on matter, e.g., the placebo effect; the psychological conditioning of immune responses; the beneficial effects on health of social support; faster recovery from surgery after mental preparation; positive imaging; meditative techniques; hypnosis research; research in psychosomatic medicine; voodoo death; the effect of mind on the DNA molecule; transpersonal experiences and the consistently proven ability of consciousness to operate

independently of the physical vehicle (telepathy, precognition, etc.). The decree that matter is the fountainhead of all values including consciousness has assumed the proportions in dogmatic conjecture equal to that of the religious fanaticism it sought to replace in the so-called Age of Enlightenment.

FIELD INTERACTION WITH LIVING SYSTEMS

The way living organisms and EM fields interact is as follows:

- EM patterns of energy from the environment act on DNA molecules in living cells which relay the information through our system. This is called 'outside to inside' interaction.
- EM effects generated within the body interact with physiological processes. This is 'inside to inside' interaction.
- EM effects, internally generated, act in turn upon external fields. This is called 'inside to outside' interaction. The process is one of feedback between the formative field and our individual bio-energetic field.

FIELD DISTURBANCES AS CAUSE OF DISEASE

Biological EM field disturbances rather than biochemical factors are primary in the cause of disease. When healthy, cells exhibit a natural characteristic frequency of vibration. This natural state can be altered and the cell made vulnerable by the presence of a disease-causing agent located outside the cell.

For this to be effective, coherence or attraction must exist between the field of the cell and that of the virus—a principle earlier outlined in relation to the nature and function of the discovered vortical field. In this way, through EM field interaction, the energy pattern of the virus can be transferred to the cell, as the cell aligns itself to the nature of its field. The process is one of induction: direct physical contact is not required. The principle applies equally on macro scale to the conscious functioning of the cell's human host.

"We attract according to our being" is an appropriate axiom.

Cells, as 'conscious living entities', are highly sensitive to a wide range of EM fields, either man-made, e.g., microwave, power lines, radar, television, etc., or arising from neighbouring EM activity in the biophysical system. Nutritional shortcomings, environmental discord, ultraviolet irradiation, drug abuse, sustained adverse mental or emotional strain, repression of creative desires, geopathic stress, and genetic factors all contribute to field disturbance, cell vulnerability, as well as immune-system deficiency.

Freedom from disease ultimately rests upon one's ability to maintain an equilibrium between a natural vibratory state and abnormal influences that may disrupt it. Many researchers are still failing to realise that disease such as cancer and AIDS is not some alien invader that attacks from outside, but rather the result of a breakdown within.

DIELECTRIC DIAGNOSIS

The advent of the DDA ushers in a new approach to medical diagnostics and assists in hastening the development also of painless and efficient electromagnetic treatments for a wide range of diseases.

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This inpouring of vitalising energy into a natural system is a function essential to the processes of life.

Although originally designed to detect intracellular disorders in a living body, the broad application of dielectric analysis forms a total system that provides scientists with thermal, rheological (current flow), EM-field, molecular thermokinetic, chemical, structural, morphological and finally biomedical diagnostic information on a wide range of materials in their various forms, bringing a high degree of accuracy, versatility and sensitivity, unobtainable via already existing methods, to the measurement of dielectric or EM field characteristics.

The DDA produces information on many key aspects of:

MATERIALS	
Organics	Polymers
Composites	Oils
Emulsions	Petrochemicals
Biomaterials	Water
Living cells	
for INDUSTRIES	
Plastics	Packaging
Automotive	Paints and Adhesives
Food Products	Electronics
Electrical Engineering	Pharmaceuticals

TECHNICAL ASPECTS

Functionally, the Dielectric Diagnostic Analyser performs the analysis of:

- Thermal transitions over the range of -100°C to $+400^{\circ}\text{C}$ at varying heat rates. It reveals transitions not visible using the most accurate contemporary techniques. It is effective for processes monitored by ions or polarisation.

- Impurities (organochlorines, pesticides, fungicides and other toxins) difficult to detect by most sensitive analytical methods, and does not require reference samples.

- Chemical changes due to oxidation; cross-linking; ageing under heat; electrical stresses; different types of radiation as they produce changes in molecular kinetics.

Gold electrode sensors permit measurements with and without immediate contact between a specimen and the electrode surfaces. The 'high voltage' electrode applies the required constant specially-selected sweep or sinusoidal voltages to the sample, and the 'measuring' electrode receives the response. The different geometries of the electrodes make possible the measurements of volume and surface properties of samples.

The electrodes, in a form of a ring around the measuring electrode, prevent electrode field fringing in the edges of the sample and drive to Earth all currents built up on the edge surfaces.

For measurements on living organisms, the different types of electrodes are used. To measure a folded tissue (tongue, breast, pinched loose skin, etc.), parallel electrodes are used with or without guard electrodes. For single surface of samples, a flat electrode system is used. All electrodes have polished surfaces and are isolated from each other and the ground by a teflon insulation. All parallel electrodes are spring-loaded to manipulate the pressure on the sample and to avoid piezoelectrets-like effect, mostly on biomedical samples. Remote-sensing electrodes are available for *in vivo* settings performing while the specimen is functioning in its usual environment. The measured information may be a feedback to a device which automatically monitors the conditions of the specimen.

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The remote-sensor electrodes, set in any location, will telemetrically pass the dielectric information to the DDA in the laboratory. In this way the DDA *in situ* measures concentrations inaccessible by analytical methods and also specifies their threshold levels. The DDA recordings of impurities are continuous, so chemicals appearing in say, water effluents, can be detected instantaneously, and by use of feedback channels, the industrial process might be controlled. The list of toxins influencing target organisms is unlimited. Materials which the DDA can analyse for residual toxins include: dairy products, meat, fish, oil seeds, vegetables, fruits, grains, stock feed, consumer goods, soil, and natural water resources.

The DDA method for the abovementioned tests is fully automated, non-invasive, non-destructive and does not require reference samples.

In the food industry, the DDA makes available unique tests in the areas of microbiology, microwave food technology, tenderness and freshness of meat and poultry. It measures fat and water content. This information is available *in vivo* for living animals.

In agriculture, remote-sensing electrodes attached onto target plants *in situ* may record nutritional and irrigation requirements and, by feedback systems, can manipulate their rational environment automatically.

Rigorous testing of the DDA and its amazing capabilities is now in progress at the Max Planck Institute of Biophysics in Berlin.

Its medical application will be geared primarily for use in hospitals and clinics. The dielectric information about a patient's existing condition or an impending disease will be transmitted directly to the DDA in the laboratory and a diagnosis returned, in most cases, within minutes. Two programmes have already been set up—one in Germany and one in Australia.

It is becoming increasingly evident that energy, rather than chemistry, will determine the future course of medicine. The implications are far-reaching. ∞

For more detailed information on Dr Barsamian's work and bio-energy fields, refer to *The Sign of the Serpent—Key to Creative Physics*, by Mark Balfour, Prism Press, UK, 1991.

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